CH-506TXPL & RXPL

HDBaseT™ Lite HDMI over Single CAT5e/6/7 Extender with PoE

Operation Manual

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SAFETY PRECAUTIONS

Please read all instructions before attempting to unpack, install or operate this equipment and before connecting the power supply.

Please keep the following in mind as you unpack and install this equipment:

- Always follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.
- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.
- Never spill liquid of any kind on or into this product.
- Never push an object of any kind into this product through any openings or empty slots in the unit, as you may damage parts inside the unit.
- Do not attach the power supply cabling to building surfaces.
- Use only the supplied power supply unit (PSU). Do not use the PSU if it is damaged.
- Do not allow anything to rest on the power cabling or allow any weight to be placed upon it or any person walk on it.
- To protect the unit from overheating, do not block any vents or openings in the unit housing that provide ventilation and allow for sufficient space for air to circulate around the unit.

REVISION HISTORY

VERSION NO.	DATE DD/MM/YY	SUMMARY OF CHANGE
VR0	18/01/13	Preliminary Release
VS1	04/07/13	Updated format/diagrams

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1. INTRODUCTION

This HDBaseT™ Lite HDMI over Single CAT5e/6/7 Transmitter and Receiver Set can send uncompressed video and audio over a single run of CAT5e/6/7 cable up to 60 meters (1080p) or 35 meters (4K×2K) with the added benefit of control through the built-in RS-232 and 2-way IR ports. The Power over Ethernet (PoE) function provides greater flexibility in installations.

2. APPLICATIONS

- Domestic HDMI installations
- University lecturing systems
- Retail showroom systems
- Conference presentation and control

3. PACKAGE CONTENTS

- 1×HDMI over Single CAT5e/6/7 Transmitter with PoE
- 1×HDMI over Single CAT5e/6/7 Receiver with PoE
- 1×IR Blaster
- 1×IR Extender
- 1×3.5 mm Mini-jack to RS-232 Female Cable
- 1×3.5 mm Mini-jack to RS-232 Male Cable
- 24 V/1.25 A DC Power Adaptor
- Operation Manual

4. SYSTEM REQUIREMENTS

HDMI source equipment such as a DVD or Blu-ray player and HDMI equipped display (TV or monitor). HDMI and CAT5e/5/7 connection cables.

5. FEATURES

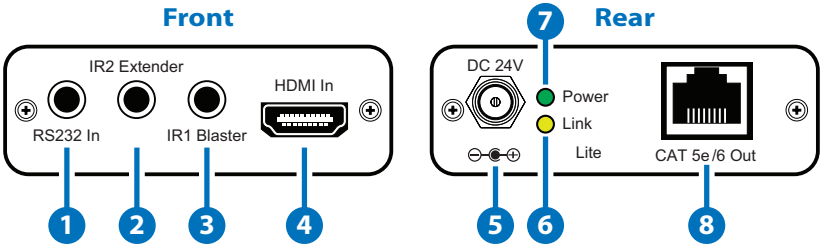
- HDMI including 3D and 4k×2k (Ultra HD) support, HDCP and DVI compliant
- Supports HDCP repeater and CEC bypass functions
- Supports HDBaseT Lite Technology including 2-Way IR, RS-232 and Power over Ethernet (PoE)
- Supports HD resolutions up to 1080p@60 Hz/36-bit and Ultra HD (4K×2K)
- Supports transmission distance of up to 60 meters through CAT5e/6/7 cable (1080p) or 35 meters (4K×2K)
- Supports HDMI input up to 15 meters at 8-bit resolution or 10 meters at 12-bit resolution and output up to 15 meters at 8-bit resolution and 10 meters at 12-bit resolution
- RS-232 with baud rate up to 115200/sec
- Supports wide range of IR frequency from 30 to 50 kHz
- Audio support up to LPCM 7.1CH, Dolby TrueHD, Dolby Digital Plus and DTS-HD Master Audio
- Installation friendly

Note

1. *This system was tested with CAT-6E/23AWG cables, results may vary with cables of a different specification.*
2. *The PoE function is designed for powering compatible receiver units only—do not use with non-PoE receivers or receivers of another brand.*

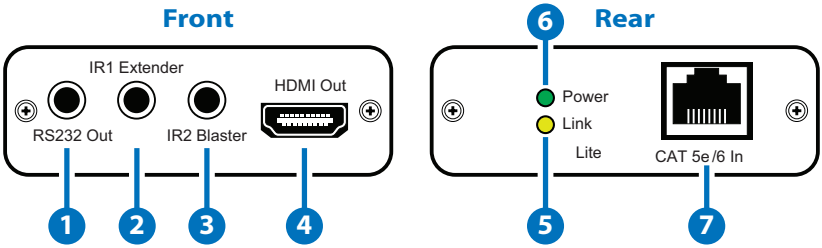
6. OPERATION CONTROLS AND FUNCTIONS

6.1 Transmitter Front and Rear Panels



1. **RS232 In:** Connect to a PC/laptop or RS-232 control device (with supplied 3.5mm mini-jack to D-sub 9-pin adaptor) for the transmission of RS-232 commands.
2. **IR2 Extender:** Connect an IR extender cable for IR signal reception. Ensure that remote control being used is within the direct line-of-sight of the IR extender.
3. **IR1 Blaster:** Connect an IR blaster cable for IR signal transmission. Place the IR blaster in direct line-of-sight of the equipment to be controlled.
4. **HDMI In:** Connect to the HDMI source equipment such as a DVD or Blu-ray player.
5. **DC 24V:** Connect the 24V DC power supply to the unit and plug the adaptor into an AC outlet.
6. **Link LED:** The yellow LED will illuminate when both the input and output CAT5e/6/7 signals are connected. The LED will blink when there is an error with the transmission signal.
7. **Power LED:** This green LED will illuminate when the device is connected to a power supply.
8. **CAT5e/6 Out:** Connect to the receiver unit with a single CAT5e/6/7 cable for transmission of all data signals.

6.2 Receiver Front and Rear Panels

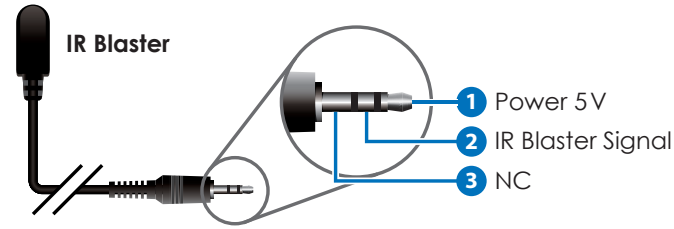


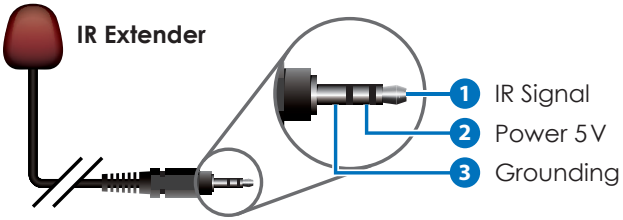
1. **RS232 Out:** Connect to the device that is to be controlled (with the supplied 3.5mm mini-jack to D-sub 9-pin adaptor) by RS-232 commands
2. **IR1 Extender:** Connect an IR extender cable for IR signal reception. Ensure that the remote being used is within the direct line-of-sight of the IR extender.
3. **IR2 Blaster:** Connect an IR blaster cable for IR signal transmission. Place the IR blaster in direct line of sight of the equipment to be controlled.
4. **HDMI Out:** Connect to a HDMI equipped TV/monitor for display of the HDMI input source signal.
5. **Link LED:** This yellow LED will illuminate when both the input and output CAT5e/6/7 signals are connected. The LED will blink when there is an error with the transmission signal.
6. **Power LED:** This green LED will illuminate when the device is connected to a power supply.
7. **CAT5e/6 In:** Connect to the transmitter unit with a Single CAT5e/6/7 cable for transmission of all data signals.

6.3 D-Sub 9-Pin Definitions

PIN	DEFINE TX/RX
1	N/C
2	TxD/RxD
3	RxD/TxD
4	N/C
5	GND
6	N/C
7	N/C
8	N/C
9	N/C

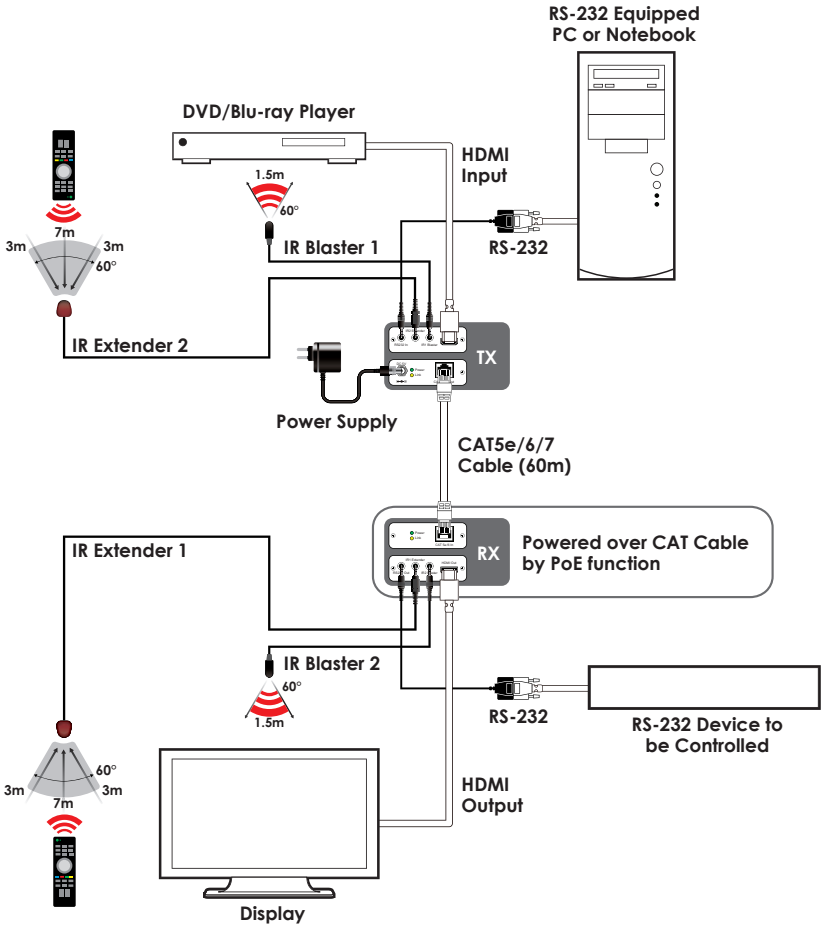
6.4 IR Cable Pin Assignment



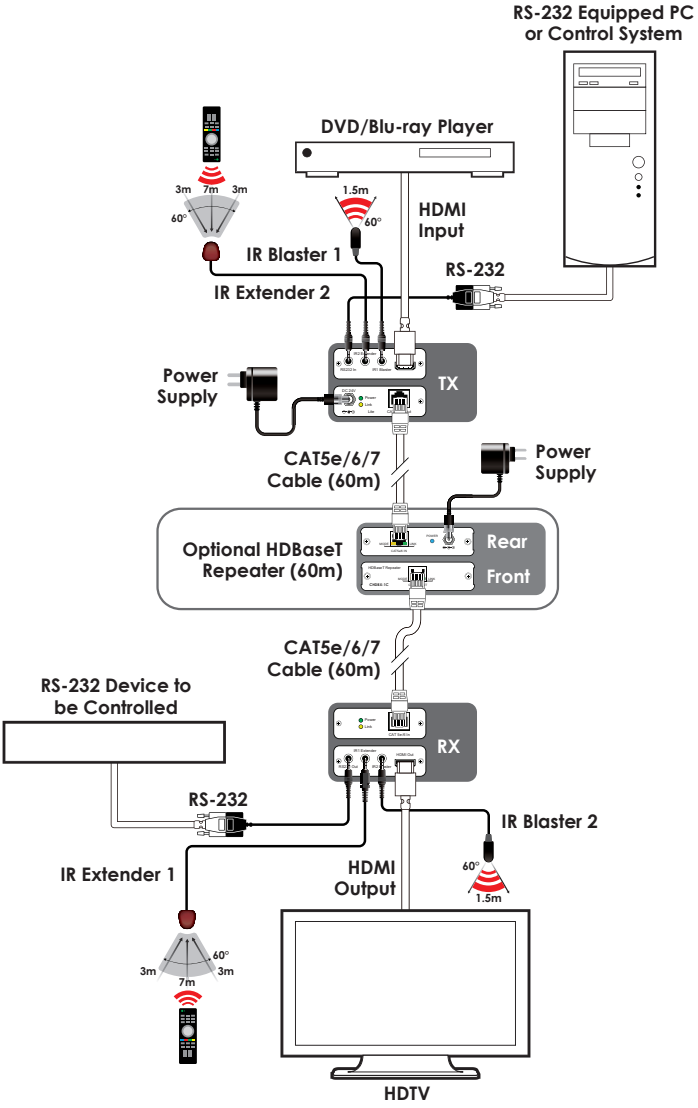


7. CONNECTION DIAGRAM

Example 1: Direct Connection



Example 2: Using a Repeater to Extend the Operating Distance



8. SPECIFICATIONS

Video Bandwidth	300 MHz/10.2 Gbps
Transmitter	
Input Ports	1×HDMI, 1×IR Extender, 1×RS-232
Output Ports	1×CAT5e/6/7, 1×IR Blaster
Receiver	
Input Ports	1×CAT5e/6/7, 1×IR Extender
Output Ports	1×HDMI, 1×IR Blaster, 1×RS-232
CAT5e/6/7 Cable Distance	Up to 60 m
HDMI Input Cable Distance	10 m@8-bit, 6 m@12-bit
HDMI Output Cable Distance	10 m@8-bit, 6 m@12-bit
ESD Protection	Human Body Model: ±8 kV (air-gap discharge) ±4 kV (contact discharge)
Power Supply	24 V/1.25 A DC (US/EU standards, CE/FCC/UL certified)
Dimensions	71 mm (W)×79 mm(D)×23 mm (H)/Each
Weight	120 g/TX, 126 g/RX
Chassis Material	Metal
Silkscreen Color	Black
Operating Temperature	0 ˚C ~ 40 ˚C / 32 ˚F ~ 104 ˚F
Storage Temperature	−20 ˚C ~ 60 ˚C / −4 ˚F ~ 140 ˚F
Relative Humidity	20 ~ 90% RH (non-condensing)
Power Consumption	3 W/TX, 6 W/RX

CAT5e/6/7 Cable Specification:

LENGTH	BANDWIDTH	DATA RATE	SUPPORTED VIDEO
Up to 60 m	Up to 225 MHz	Up to 5.3 Gbps	**HD Video** Up to 1080p@60 Hz/36-bit, 3D (data rate lower than 5.3 Gbps or bandwidth below 225 MHz).
Up to 35 m	Greater than 225 MHz	Greater than 5.3 Gbps	**Ultra HD Video** Up to 4K×2K@30 Hz.

9. ACRONYMS

ACRONYM	COMPLETE TERM
CAT5e	Category 5 Cable
CAT6	Category 6 Cable
CAT7	Category 7 Cable
CEC	Consumer Electronics Control
DVI	Digital Visual Interface
HDCP	High-bandwidth Digital Content Protection
HDMI	High-Definition multimedia Interface
IR	Infrared
PoE	Power over Ethernet

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